

V. *Two new British species of Hydroptila.* By MARTIN
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[Read February 1st, 1922.]

PLATE II.

IN a paper read before this Society in October 1919, I mentioned that there were in my collection two undescribed British species of *Hydroptila*. At the time, lack of material precluded the exhaustive examination of the scent-organs which now seems necessary for the satisfactory separation of the four species which are grouped round and which very closely resemble *H. sparsa* Curt.

Last season I was successful in finding three or four more examples of each of these new species, and with Dr. H. Eltringham's kind assistance have ascertained that the scent-organs furnish abundant characters to prove that they are distinct.

H. cornuta has no eversible filament at all, and the scent-organ is reduced to the simplest form so far seen in *Hydroptila*. It resembles *sparsa* in the shape of the lobe and also in the marginal outline of the dorsal plate, but the inferior appendages bear a closer resemblance to those of *simulans*.

H. angulata closely resembles *H. simulans* in the shape of the dorsal plate and the arrangement of the scent-organ. Dr. Eltringham, however, has ascertained that the scent-hairs of the brushes are much finer and apparently have no external structure. A marked difference is shown in the shape of the lobe or scent-organ cap.

It may be of interest to mention here, that *H. simulans* has been found very plentifully in Hampshire; along some stretches of the R. Test it may be said to be the prevailing *Hydroptila* species for a considerable portion of the summer and autumn. I have now obtained some hundreds of examples from this district. I have also taken it on the R. Avon at Ringwood, the R. Torridge at Sheepwash in N. Devon, the R. Thames at Hampton Court, and Dr. Georg Ulmer writes that he has found it in his collection mixed with examples of *sparsa* from Thuringen.

H. angulata and *H. cornuta* seem comparatively rare. Of *angulata* I have three examples from the Lambourne, in
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Berkshire; one from the Usk at Senny Bridge, Breconshire; five or six from the R. Torridge at Sheepwash; and Mr. K. J. Morton has some examples which were taken, I believe, towards the west coast of Ireland.

Of *cornuta*, I have three examples from the Test; one from the Thames at Hampton Court, and on examining the collection at the Natural History Museum, found mixed with *sparsa*, five or six examples collected by the Rev. A. E. Eaton at Ringwood, on the R. Avon. A visit to this district failed to discover any more.

Basing the sequence on the scent-organ characters, one would be inclined to arrange this little group in the order *cornuta*, *sparsa*, *angulata* and *simulans*.

Hydroptila cornuta, n. sp.

Description of the ♂.

Expanse $7\frac{1}{2}$ mm. Antennae about 31-jointed, the head furnished with lobes shaped as in *sparsa*.

The scent-organs are much simplified in form and appear to consist merely of two groups of scent-hairs arising from the membranes which line the inner surface of each lobe.

The dorsal plate resembles that of *sparsa*, but the extreme angles of the plate are produced to form slight spurs. Towards the base of the plate there are well-marked projections on each side. The two side processes arising from the 9th segment are longer and more slender than those found amongst other members of the group. The penis is as usual bent round at right angles towards the apex. The inferior appendages resemble those of *simulans*, but the dark warts towards the extremities develop into claw-like spurs.

The ventral plate is deeply excavated in the centre of the upper margin.

H. angulata, n. sp.

Description of the ♂.

Expanse $6\frac{1}{2}$ mm. Antennae about 32-jointed.

The scent-organs closely resemble those of *simulans*, with the slight variations mentioned above. The lobe differs considerably. In *simulans* it is acorn-shaped with the acorn portion much longer than the cup. In *angulata* the areas of the acorn and cup are about equal and the length and breadth of the lobe are approximately the same.

The margin of the dorsal plate is difficult to make out. It closely resembles that of *simulans*, but the extreme angles of the

plate are more rounded and the excision is perhaps a little narrower. The penis and the side-pieces of the 9th segment are as in *sparsa* and *simulans*. The inferior appendages have large, flattened extremities turned outward at a sharp angle to the main stem and terminate in dark, roughened edges.

The upper margin of the ventral plate has a shallow excision and appears far more strongly chitinised than the rest of the plate.

Both species are described from examples in Canada balsam and the different aspects are drawn from different examples.

EXPLANATION OF PLATE II.

- FIG. 1. *Hydroptila cornuta* ♂. Genitalia from above.
 2. " " " " beneath.
 3. " " " " the side.
 4. " *angulata*. " " "
 5. " " " " beneath.
 6. " " Lobe of the head.